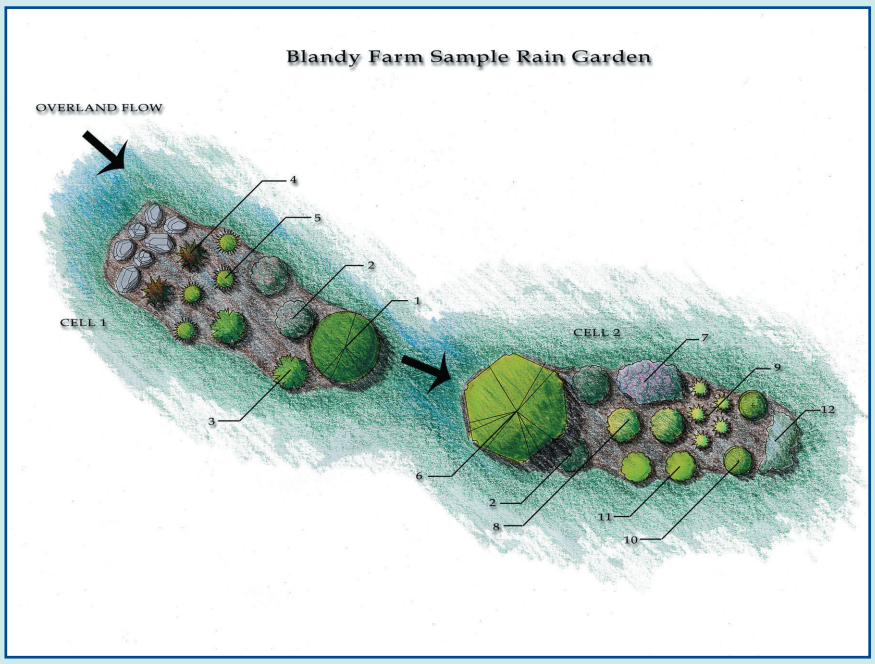
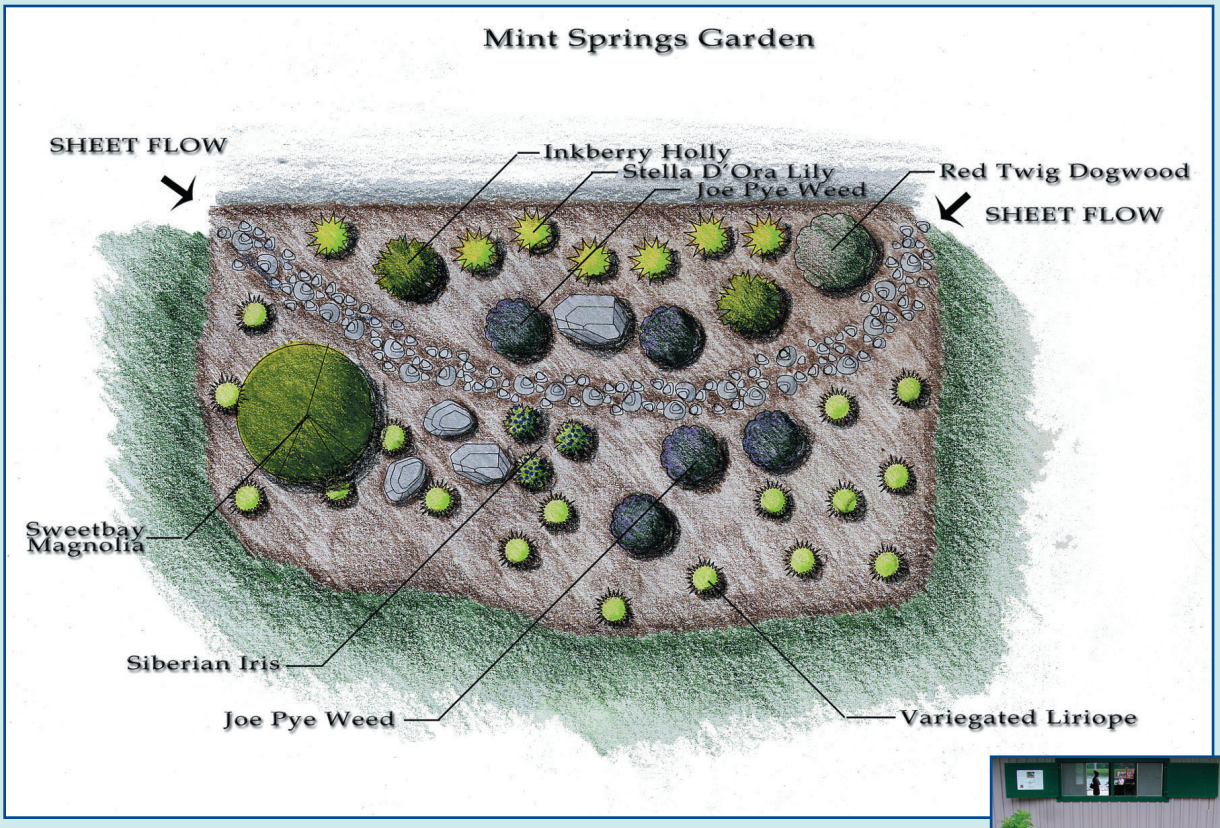
# Rain Garden Designs

The following gardens are actual gardens depicted graphically as well as with digital photos. The plant lists should be referenced to the graphic design. They are gardens that can be copied if individuals find them suitable for their own sites. Be conscious of the placement, light requirements and wildlife values of the plants listed. Check with a local nursery to find other suitable plants that can be substituted in these designs. There is an extensive list of plants located in Appendix D.




## Blandy Farm Sample Garden Plant List

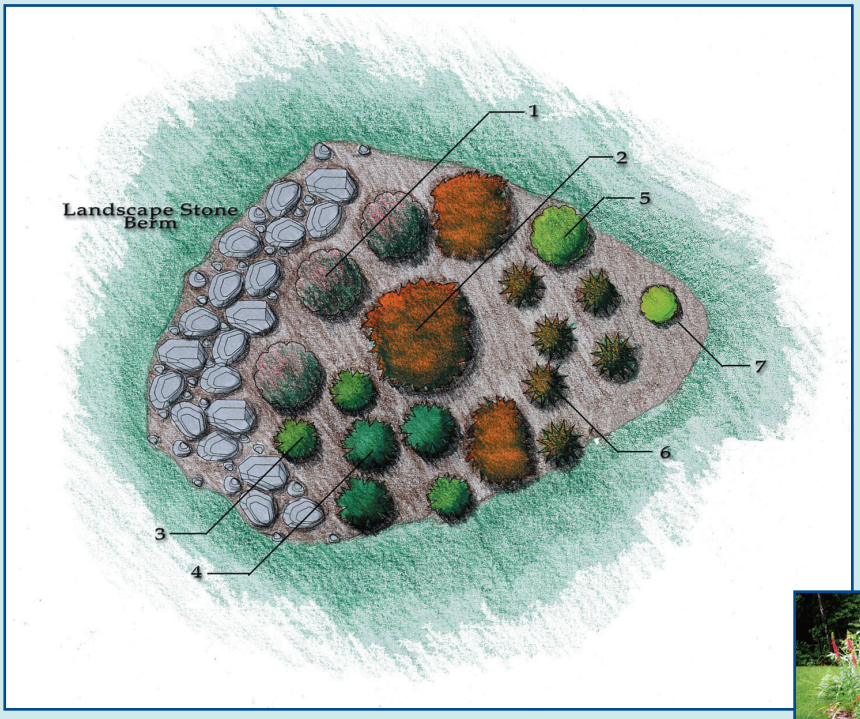
| Plant Species | Description | Height | Wildlife Value | Water Tolerance | Light Needs |
|---|---|---|---|---|---|
| 1. Sweetbay Magnolia<br>Magnolia virginiana | Small tree with large white fragrant flowers | 15-20 ft. | Pollinators and seed for large birds/small mammals | Moderately wet | Full sun to shade |
| 2. Red twig dogwood<br>Cornus sericea | Shrub with white flowers and berries | 10 ft. | Pollinators, birds and small mammals | Very wet to dry | Full sun to shade |
| 3. Winterberry holly<br>Ilex verticillata | Shrub with red berries | 10 ft. | Pollinators, birds and small mammals | Wet to very wet | Partial sun to shade |
| 4. Cardinal flower<br>Lobelia cardinalis | Perennial with red flowers on spike | 4 ft. | Pollinators including hummingbirds | Wet to very wet | Full sun to partial shade |
| 5. Turtle head<br>Chelone glabra | Tall spikes with pink, red, white flowers | 3-4 ft. | Insect pollinators | Moderately wet | Partial sun to shade |
| 6. River Birch<br>Betula nigra | Medium tree with weeping branches and peeling tan bark | 40 ft. | Seeds for songbirds particularly finch | Moderately wet to dry | Partial sun to shade |
| 7. Joe Pye Weed<br>Eupatorium maculata | Perennial with lavender flat flowers | 3-4 ft. | Insect pollinators and songbirds | Wet to moderately dry | Full sun to partial shade |
| 8. Witch hazel<br>Hamamelis virginiana | Shrub with yellow flowers in fall | 8-10 ft. | Small birds | Moderately wet to dry | Full sun to partial shade |
| 9. Goldenrod<br>Soidago sempervirens | Perennial spike with gold flowers | 2-3 ft. | Insect pollinators and songbirds | Slightly wet to dry | Full sun to partial shade |
| 10. Sweet pepper bush<br>Clethra alnifolia | Small shrub | 5-8 ft. | Pollinators including hummingbirds | Slightly wet to dry | Full sun to partial shade |
| 11. Hibiscus<br>Hibiscus moscheutos | Large perennial with snowy flowers - variety of colors | 3-5 ft. | Pollinators particularly hummingbirds | Wet to very wet | Full sun to partial sun |
| 12. Iris<br>Iris sp. | Small perennial with blue flowers | 2 ft. | Insects | Wet to very wet | Full sun |

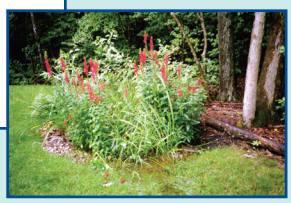



## Mint Springs Sample Rain Garden Plant List

| Plant Species | Description | Height | Wildlife Value | Water Tolerance | Light Needs |
|---|---|---|---|---|---|
| 1. Stella Dora Lily<br>Hemerocallis | Dwarf Yellow Day Lily<br>green soft<br>stemmed plant | 12-14 in. | Pollinators | Moderately wet | Full sun to<br>partial shade |
| 2. Ink Berry Holly<br>Ilex glabra | Evergreen holly<br>woody shrub | 4-8 ft. | Birds | Moderately wet<br>to very wet | Full sun to<br>partial shade |
| 3. Joe Pye Weed<br>Eupatorium<br>maculatum | Lavender flower<br>perennial plant | 4-8 ft. | Butterflies and<br>other pollinators | Moderately wet<br>to very wet | Full sun to<br>partial shade |
| 4. Red Twig Dogwood<br>Cornus sericea | White flowers and<br>berries, red<br>woody stemmed shrub | 4-8 ft. | Birds and pollinators | Moderately wet<br>to very moist | Full sun to<br>shade |
| 5. Sweetbay Magnolia<br>Magnolia virginiana | Small tree with<br>large white<br>blossoms, red seed | 10-15 ft. | Pollinators, birds,<br>small mammals | Moderately wet to<br>dry | Full sun to<br>partial shade |
| 6. Varigated Liriope<br>Liriope platyphylla | Green and White<br>leaves, purple<br>flower perennial plant | 12 in. | Pollinators | Slightly wet to dry | Full sun |
| 7. Siberian Iris<br>Iris siberica | Green fleshy<br>leaves and deep<br>blue flowers | 6-10 in. | Pollinators | Moderately wet<br>to very wet | Full sun to<br>partial shade |

· All shrubs should be spaced 3 - 5 ft. apart
· All perennial plants should be spaced 12 - 15 in. apart



## Solomon Sample Rain Garden Plant List

| Plant Species | Description | Height | Wildlife Value | Water Tolerance | Light Needs |
|---|---|---|---|---|---|
| 1. Red Twig Dogwood Cornus sericea | Red stems, white flowers and white berries, woody shrub | 10 ft. | Pollinators and birds | Very wet to moderately dry | Full sun to shade |
| 2. Day Lilies Hemerocallis sp | Orange flowers spike foliage, leafy green plant | 2-3 ft. | Pollinators | Moderately wet to dry | Full sun to shade |
| 3. Royal Fern Osmunda regalis | Tall fronds delicate structure, leafy green plant | 2 ft. | Shelter for amphibians and insects | Very wet | Partial shade to shade |
| 4. Cinnamon Fern Osmunda cinnamomea | Tall leathery fronds leafy green | 3 ft. | Shelter for amphibians and insects | Very wet | Full sun to shade |
| 5. Hibiscus moscheutos | Large flowers muliple colors available, strong green stem | 3-5 ft. | Hummingbirds, butterflies and other insects | Very wet | Full sun to partial shade |
| 6. Cardinal Flower Lobelia cardinalis | Spike flowers bright red, green plant | 3-4 ft. | Hummingbirds and other pollinators | Moderately wet to very wet | Full sun to partial shade |
| 7. Pickerelweed Pontederia cordata | Green heart-shaped leaves, purple spike flowers | 2-3 ft. | Polinators and shelter for amphibians and insects | Very wet | Full sun |

· All shrubs should be planted 3 - 5 ft. apart
· All green (herbaceous) plants should be 12 - 15 in. apart

# Glossary

**Amend -** to change for the better; to improve

**Berm -** a narrow ledge; a bank of earth

**Bio-retention -** a depressional area created to filter contaminants/pollutants from storm water

**Compaction -** the process of hardening under pressure

**Depression** - a lower position than surrounding margin

**Drip Line -** line where the water drips from the outside edge of the tree canopy

**Elevation -** the rise of the land over a horizontal distance

**Excavate -** to dig out and remove

**First Flush -** the rush of water carrying the most pollutants off impervious surfaces

**Herbaceous Plants**- plants with soft green stems

**Impervious** - a hard material, such as asphalt or rooftops, that stops water from soaking into the surface

**Infiltration** - the amount of water that can move through the soil pores from the soil surface

**Native Plants** -belonging in, or associated with, a particular geographic area

**Percolation -** to pass or trickle through a surface

**Perennial Plants** - plants that continue growth every year without interruption

**Pollution -** to make impure or unclean

**Runoff** - is the water that runs across surfaces during rain/snow events

**Sheet flow -** water flowing horizontally across the landscape

**Storm water** - water that results from heavy precipitation

**Survey -** to determine a position by taking measurements

**Swale -** a heavily vegetated low area in the landscape

**Topography -** feature of the landscape relative to position and height

**Transect -** a line crossed by other lines

**Water Table -** the surface where water meets the lower soil layer that is confining it

**Woody Plants** - plants that have a hard fibrous stem

# Additional Resources

**Potomac Watershed Partnership**
http://www.potomacwatershed.net/

**Virginia Department of Forestry**
http://www.dof.virginia.gov/

**Chesapeake Bay Foundation**
http://www.cbf.org/

**Virginia Native Plant Society**
Has a list of nurseries that carry native plants.
http://www.vnps.org/

**Department of Conservation and Recreation**
"Native Plants for Conservation, Restoration and Landscaping"
http://www.dcr.virginia.gov/dnh/native.htm

**Prince George's County Bioretention**
http://www.co.pg.md.us/Government/AgencyIndex/DER/ESD/Bioretention/Bioretention.asp

**Blue Ridge Community College**
http://www1.brcc.edu/murray/research/Rain_Garden/default.htm

**Virginia Tech Soil Sampling Laboratory**
http://www.ext.vt.edu/pubs/compost/452-129/452-129.html#toc

**EPA Native Landscaping**
http://www.epa.gov/greenacres/

**Additional Rain Garden Web sites**
http://www.urbanwaterquality.org/RainGardens/website.htm

**International Society for Arboriculture**
http://www.isa-arbor.com/

# Appendix A

## Water Quality Protection Tips

### Ways to improve water quality for everyones' benefit

- Protect ground water and surface water
  Properly dispose of unwanted engine oils, chemicals and hazardous fluids at participating recycling centers.

- Select landscape plants wisely
  Select native plants that need little water and fertilizer. Use mulches to help retain the moisture in those dry months. If watering is necessary, then water only in the early morning or late evening.

- Routinely maintain septic systems
  In order for the system to function properly, a septic system should be inspected and maintained every 3-5 years.

- Integrate storm water management features into your home and yard
  Create a Rain Garden, install a rain barrel or divert your downspouts to your lawn so that you may use the storm water runoff for your benefit.

- Test soils prior to maintaining the yard
  Improper use of fertilizers is a major source of nutrient pollution that clogs our waterways each year. Test the soils to identify the amount of fertilizer that is needed. Better yet, leave the clippings on the lawn and let the lawn fertilize itself. Compost also works great as a lawn and garden fertilizer.

- Promote natural revegetation
  Leave an unmowed buffer along the edge of the woods or along a waterway. This will provide additional habitat in addition to improving water quality.

- Dispose of animal waste properly
  Pet waste contributes greatly to nutrient pollution. Scoop the waste and dispose in the proper receptacles.

- Do not litter
  Litter that is thrown on the ground or ditch ends up in our rivers, bays and oceans. Dispose of waste properly.

- Plant a tree
  Trees provide many natural benefits such as cycling nutrients in water and air, providing wind and sun blocks, food for wildlife, and erosion control.

# Appendix B

## A Good Habitat…

- provides food, water, and shelter for a variety of native wildlife species;
- incorporates the use of native plants in the landscape plan, and
- takes into account that plants and animals are interrelated in a complex food web.

You can create or improve a **HABITAT AT HOME©** by incorporating these main "ingredients"…

**SHRUBS AND TREES that provide food and cover**.

- **Shrubs**: chokeberry (*Aronia*); chokecherry (*Prunus*); winterberry and inkberry (*Ilex*); bayberry and wax myrtle (*Myrica*); blackberry (*Rubus*); *Viburnums* (e.g. arrowood, blackhaw, cranberry bush)
- **Trees**: black cherry (*Prunus serotina*); dogwoods (*Cornus*); hollies (*Ilex*); oaks (*Quercus*); eastern red cedar (*Juniperus virginiana*); blackgum (*Nyssa*); eastern white pine (*Pinus strobus*)
- Select deciduous shrubs for their flowering and fruiting quality and persistence. Group your plant material in clusters to provide maximum shelter for nesting birds. Be sure the overall composition includes evergreens that provide important protection from winter's cold and summer's heat. "Layer" the vegetation so that your habitat contains a variety of plant heights.

**WATER SOURCES, such as shallow pools for amphibians and small mammals, and pedestal baths for songbirds**. In small water features, you can avoid a mosquito problem by adding a "mosquito dunk," available at local home garden centers. Mosquito dunks are slow-release, pest-control disks which contain the active ingredient Bt (*Bacillus thuringiensis*), a form of bacteria that kills mosquito- and black fly larvae but is non-toxic to other species. In larger water gardens, use a pump to circulate water, which discourages mosquitoes from laying eggs. Clean bird baths every few days with several quick swipes of a scrub brush and fresh water. Clean with bleach if algae has built up around the rim.

**NECTAR SOURCES for butterflies, hummingbirds, and other vital pollinators**. Examples include flowering shrubs like azalea (*Rhododendron*), pepperbush (*Clethra*), sweetspire (*Itea*), and buttonbush (*Cephalanthus*). Consider flower beds that favor native perennials, such as *Asters*, milkweeds (*Asclepias*), cardinal flower (*Lobelia*), coneflower (Echinacea), black-eyed Susan (Rudbeckia), goldenrod (Solidago), bergamot and bee balm (*Monarda*).

**BIRD FEEDERS.** There are numerous styles and designs of feeders on the market. A platform feeder holds millet and other seed in an uncovered tray that sits on four legs about 10 inches off the ground; it is useful for mourning doves. A hopper feeder, good for cardinals and other birds which prefer sunflowers, is a box that dispenses seed from the sides, and it can be mounted on a pole or suspended from a tree. A thistle feeder is a vertical tube with tiny slits in the side, designed for finches, and a suet feeder is a screened square or mesh bag through which a woodpecker or nuthatch can peck. Try to hang your feeder out of reach of squirrels, or use a baffle to protect it. Avoid feeding old bread and other kitchen scraps, as these items attract starlings and crows. Do not encourage mammals like deer and raccoons to feed on corn, apples, etc., in your yard—these species can become a neighborhood nuisance.

**NEST BOXES.** If possible, leave a dead tree or a trunk standing in your yard, where woodpeckers can make holes, which will in turn provide places for other wildlife to nest and raise their young. If there are no dead trees nearby, put up a bird house for cavity-nesting species such as the chickadee, nuthatch, wren and bluebird. The bird house should have some vent holes at the top and drainage holes on the bottom; it does not need a perch on the front. A bat box may be used by a small colony of little brown bats—important nighttime insect eaters.

**BRUSH PILES OR ROCK PILES.** Small animals such as chipmunks, rabbits, lizards and toads require suitable places to hide from predators. A small rock pile or brush pile constructed of medium-sized branches might be sited in an out-of-the-way place in your yard. Try hiding the pile with a native vine like Virginia creeper.

****An effective HABITAT AT HOME© functions as a small food web for many species.****

Contact the Virginia Department of Game and Inland Fisheries for more information, at HabitatAtHome@dgif.virginia.gov